HSD41

Disparities by gender, race and geography exist in whether patients receive a confirmatory celiac disease endoscopy and biopsy after screening positive

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BEYOND CELIAC
Together for a Cure

Introduction

Celiac disease (CD) is a serious genetic autoimmune disease that affects approximately 1% of the United States (US) population.[1] People with celiac disease have an immune-mediated response to gluten in wheat, barley and rye. Celiac disease manifests in a number of different ways, with both gastrointestinal and non-gastrointestinal symptoms.[2] Up to 50% of people with celiac disease remain undiagnosed.[3]

Guidelines from US-based professional gastroenterological associations recommend patients receive an endoscopy and biopsy to confirm the CD diagnosis after a positive blood test.[4] A US-based insurance claims database was analyzed to determine whether these guidelines are followed and any differences by demographics.

Methods

This study used the Optum Clinformatics® database, which includes commercial and Medicare Advantage claims from all 50 states. A representative 25% sample was analyzed, with approximately 19.3 million unique patients. Patients without a previous CD ICD-9 or ICD-10 code were analyzed. Significant differences were calculated using chi square tests ($p < .05$). Post-hoc z-tests were conducted on adjusted residuals with the Bonferroni correction.

Results

8544 patients not previously diagnosed with CD had a positive screening test (see demographic breakdowns in Figures 1-3). 5987 (70.1%) of these patients received the recommended endoscopy and biopsy. Significantly more women (71.6%) and fewer men (67.3%) than expected obtained the endoscopy and biopsy ($p < .01$) (Table 1). Significantly more non-Hispanic White patients (72.89%), and significantly fewer non-Hispanic Asian patients (59.31%) and patients with unknown/missing race data (54.43%) than expected obtained an endoscopy and biopsy ($p = .005$) (Table 2).

In an analysis of known census regions ($N = 8515$), there was a significant association with obtaining an endoscopy and biopsy ($p < .02$). Though no significant pairwise differences were found, more patients in the Midwest (71.96%) and South (71.32%) obtained an endoscopy and biopsy compared to patients in the Northeast (68.56%) and West (67.95%) (Table 3).

Conclusions

Almost one-third of patients with a positive screening test did not have the recommended confirmatory endoscopy and biopsy. Despite the location of many celiac centers in the Northeast, more patients in this region did not receive appropriate follow up compared to other regions. It is unclear why fewer non-Hispanic Asian patients had the appropriate endoscopy and biopsy.

This study highlights some demographic disparities in who gets appropriate care after a positive CD screening test. Conclusions about whether the endoscopy and biopsy was missed due to the patient, provider, or another cause cannot be drawn from this data. There are many reasons a patient may choose not to obtain the recommended endoscopy and biopsy. More research is needed to understand these disparities.

Results by Demographics

Table 2: Results by race/ethnicity

Race/ Ethnicity	Population with Positive Screening Result *N* (%)	Endoscopy/ Biopsy Obtained *N* (%)
Non-Hispanic Asian*	290 (3.39%)	172 (59.31%)
Hispanic	894 (10.46%)	596 (66.67%)
Non-Hispanic Black	581 (6.8%)	413 (71.08%)
Non-Hispanic White*	6,046 (70.76%)	4407 (72.89%)
Missing/ Unknown*	733 (8.58%)	399 (54.43%)

*p = .005

Table 1: Results by gender

Gender	Population with Positive Screening Result *N* (%)	Endoscopy/Biopsy Obtained *N* (%)
Female	5,464 (63.95%)	3913 (71.61%)*
Male	3,077 (36.01%)	2071 (67.30%)*
Missing/ Unknown	3 (0.04%)	0 (0%)

*p < .01

Table 3: Results by census region

Census Region	Population with Positive Screening Result *N* (%)	Endoscopy/Biopsy Obtained *N* (%)
West	2,003 (23.44%)	1361 (67.95%)
Northeast	1,492 (17.46%)	1023 (68.56%)
South	4,164 (48.74%)	2974 (71.42%)
Midwest	856 (10.02%)	616 (71.96%)

p < .009

Demographics of Screened Population with Positive Test

Figure 1: Results by gender

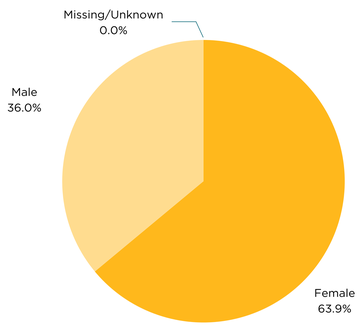


Figure 2: Results by race/ethnicity

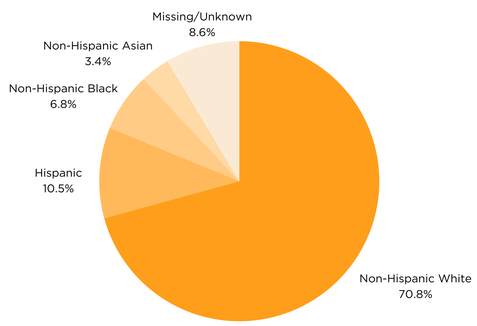
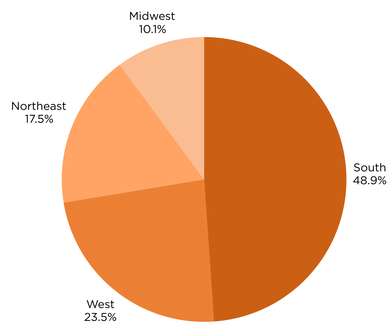


Figure 3: Results by census region



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